

Kindly enter the following Amendment:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-12. *(cancelled)*

13. *(new)* A method using fluorescence microscopy for image evaluation, the method comprising the steps of:

using a laser scanning microscope in which an at least partially spectrally resolved detection of the fluorescence spectrum occurs;

using reference spectra for spectral demixing;

employing temporally and/or spectrally variable dyes and/or dye combinations for recording of the reference spectra; and

demixing the recorded reference spectra for image evaluation.

14. *(new)* The method according to claim 13 wherein the method records organic processes.

15. *(new)* The method according to claim 13 wherein the method records intracellular processes.

16. *(new)* The method according to claim 14 wherein the method records intercellular processes.

17. *(new)* The method according to claim 13 wherein the method records cells and/or cell populations.

18. *(new)* The method according to one claim 13 in which recording of reference spectra of photoconvertible dyes occurs.

19. *(new)* The method according to one claim 13 in which recording of reference spectra of photoactivatable dyes occurs.

20. (new) The method according to claims 13 in which recording of reference spectra of indicator dyes occurs.
21. (new) The method according to claim 13 in which recording of reference spectra of dyes occurs that change their spectra dynamically based on intracellular processes.
22. (new) The method according to one claim 13 in which recording of reference spectra of dyes occurs with a different rise in fluorescence intensity.
23. (new) The method according to claims 13 in which recording of reference spectra of the fluorescing protein Kaede occurs.
24. (new) The method according to one claims 13 in which recording of reference spectra of PA-GFP occurs.